



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1459
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,815	02/21/2006	Akihiko Shiina	04970/0203488-USO	7753
7278	7590	02/02/2009		
DARBY & DARBY P.C. P.O. BOX 770 Church Street Station New York, NY 10008-0770			EXAMINER STABLEY, MICHAEL R	
			ART UNIT	PAPER NUMBER
			3611	
			MAIL DATE	DELIVERY MODE
			02/02/2009 PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/553,815

Applicant(s)

SHIINA ET AL.

Examiner

Michael R. Stabley

Art Unit

3611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-6,9 and 10 is/are rejected.
- 7) ☒ Claim(s) 3,7 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/CC)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 6, 9, and 10 rejected under 35 U.S.C. 102(b) as being anticipated by Jammer (U.S. 6,520,042).

In re claim 1, Jammer discloses an electric power steering device comprising: a small gear (104) having a gear body which is rotated by an electric motor and on which a tooth portion is formed and shaft portions respectively formed so as to protrude from both end portions of said gear body and being smaller in diameter than said gear body; bearings (108) for respectively bearing both said shaft portions of said small gear so that said small gear can move in an axial direction; two circular elastic bodies (120), respectively externally fitted on both said shaft portions of said small gear, for suppressing movement of said small gear in the axial direction to shaft end portions; and a large gear (102) meshing with the tooth portion of said gear body of said small gear and connected to a steering means; and being configured to assist steering by rotation of said electric motor, characterized by comprising limiting members (122 & 124), arranged along outer circumferences of said shaft portions respectively at its both end portions of said gear body, for limiting deflection amounts of said elastic bodies, wherein each elastic body is disposed adjacent to a respective one of the bearings and

adjacent to a respective one of the limiting members. The Examiner notes that when the flared edges (127) meet they limit the deflection of the elastic body as shown in Figure 5C.

In re claim 2, Jammer discloses the electric power steering device as set forth in claim 1, characterized in that said circular elastic body has flat portions formed on inner circumferential side, and a tapered portion formed on outer circumferential side and connected to said flat portions as shown in Figure 5A.

In re claim 6, Jammer discloses the electric power steering device as set forth in claim 1, characterized in that said bearings (108) are roller bearings, and said circular elastic bodies are installed in inner rings of said roller bearing as shown in Figure 2.

In re claim 9, Jammer discloses the electric power steering device as set forth in claim 1, characterized in that said circular elastic bodies are cylindrical elastic bodies externally fitted over portions of said shaft portions of said small gear between inner rings of said roller bearings and end portions of said gear body of said small gear, and said limiting members (122 & 124) are provided at portions of end portions of said small gear inside said cylindrical elastic bodies as shown in Figure 2.

In re claim 10, Jammer discloses the electric power steering device as set forth in claim 9, characterized in that said cylindrical elastic bodies are coil springs, and said limiting members are convex members provided so as to be integrated with the end portions of said small gear.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 4 rejected under 35 U.S.C. 103(a) as being unpatentable over Jammer in view of Murakami (U.S. 2001/0040067).

In re claim 4, Jammer discloses the electric power steering device as set forth in claim 1, characterized in that said bearings are configured so as to be movable in a direction wherein a distance between a rotational center of said small gear and a rotational center of said large gear becomes long or short but does not disclose an energizing means for energizing said bearings in a direction wherein the distance between the rotational center of said small gear and the rotational center of said large gear become short is provided. Murakami, however, does disclose such an energizing means for energizing the bearings as discussed in the abstract and shown in Figure 7. It would have been obvious to one having ordinary skill in the art at the time the invention was made to add the energizing means of Murakami to the power steering device of Jammer for enhanced operation of the worm gear as taught by Murakami.

5. Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Jammer and Murakami as applied to claim 4 above, and further in view of Takata (WO 94/27057).

In re claim 5, Jammer and Murakami disclose the electric power steering device as set forth in claim 4, characterized in that said bearings are roller bearings but does not disclose that the circular elastic bodies are Belleville springs disposed between inner rings of said roller bearings and end portions of said gear body of said small gear. Takata, however, does disclose the use of Belleville springs as shown in Figure 2 as an equivalent structure known in the art of power steering apparatuses. Therefore, because these two elements were are-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute the two circular elastic bodies.

Allowable Subject Matter

6. Claims 3, 7, and 8 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments filed 1/6/09 have been fully considered but they are not persuasive. Applicant argues that the elastic body of Jammer is not adjacent to the bearings. Merriam-Webster's Online Dictionary defines the term adjacent as "not distant: nearby" and that it "may or may not imply contact." Using this definition, one can see in Figure 2 of Jammer that the elastic body is adjacent to the bearing.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael R. Stabley whose telephone number is (571)270-3249. The examiner can normally be reached on M-F 7:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lesley D. Morris can be reached on 571-272-6651. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael R Stabley/
Examiner, Art Unit 3611

/Paul N. Dickson/
Supervisory Patent Examiner, Art Unit 3611